

REQUEST FOR PROPOSALS & QUALIFICATIONS
Geomorphology-based Restoration Design and Permitting for the Suncook
River in Epsom, NH

September 1, 2009



Town of Epsom - Board of Selectmen
27 Black Hall Road, PO Box 10
Epsom, NH 03234-4337

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Geomorphology-based Restoration Design and Permitting for the Suncook River in Epsom, NH

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I. REQUIRED PROPOSAL & QUALIFICATIONS SUBMISSIONS

Each consultant will submit a proposal package to the Town of Epsom Board of Selectmen that includes the following components as described in detail below:

- The project team, including project team organization, team member qualifications and the anticipated level of involvement of key team members in each phase of the project as described in the project approach and scope of work.
- A technical proposal that describes the team's project approach and scope of work.
- A proposed project schedule.
- A Task Table that includes the following elements:
 - Brief description of each task
 - Proposed completion dates of each task

Complete and timely submittal of all required proposal documents is required for the proposal to be considered.

Each consultant will submit three (3) hard copies of all documents and one PDF version by close of business on, **August 21, 2009 at 3:00 p.m. to:**

Town of Epsom
Attn: Board of Selectmen
PO Box 10
27 Black Hall Road
Epsom, New Hampshire 03234

Interviews will be scheduled between **September 1st and September 4th**. After the quality-based ranking is complete, the first ranked consultant will provide a task based cost proposal, and the Town of Epsom will proceed with contract negotiations with that consultant. If these negotiations are not successful, the Town of Epsom will negotiate with the second ranked consultant, etc. until a contract has been successfully negotiated.

II. PROJECT TEAM AND LEVEL OF PARTICIPATION

The proposal will identify the individuals responsible for managing the project and conducting specific project tasks. The proposal will also estimate the expected level of participation in the project tasks and in the overall project. An organization chart showing lines of communication and decision-making hierarchy will be included in the proposal.

III. PROJECT APPROACH/SCOPE OF WORK

The technical proposal must contain the elements contained in Attachment I. Attachment I contains Scope of Work Guidance to assist in the development of the project approach/scope of work. It must be clear on how all these elements will be addressed and also how public participation and interaction with the various stakeholders will occur.

IV. PROJECT SCHEDULE

The consultant will provide a schedule to conduct and complete the project. The schedule will include project tasks as identified in the Scope of Work. Project tasks will be laid out in a flow chart identifying the anticipated days to complete each task and the interrelationship of conducting and completing these tasks. It is expected that this project will be completed by **August 31, 2010**.

V. SELECTION CRITERIA

Selection will be based on both the written proposal and an interview. Consultants will be assessed based on the following criteria.

1. *Specialized Experience of the Project Team* (40 Percent)

The Consultant will be rated on:

- (a) their specialized experience directly relating to fluvial geomorphology based assessments
- (b) development of restoration plans and permits necessary for commencement of construction
- (c) identification and prioritization of areas of concern relevant to infrastructure, restoration of riparian buffers, aquatic habitat, and floodplain habitat
- (d) development of restoration designs based on natural stream channel design principles
- (e) demonstrated ability to complete the work within the required schedule and budget
- (f) demonstrated ability to effectively solicit, assess, and use comments and suggestions from stakeholders during project development.
- (g) development and implementation of fluvial geomorphology based assessments and restoration projects in New Hampshire and/or New England.

2. *Project Personnel* (40 Percent)

The Consultant will be rated on the principal team members' role and participation level, and the qualifications and experience of key personnel, their communication abilities, and availability during the project.

- Project Manager 30 Percent
- Task Managers 10 Percent

3. *Project Approach* (20 Percent)

The Consultant will be rated on the approach to the project scope outlined in this RFP, the understanding of the project scope and schedule of work and the interfacing of tasks.

Upon completion of the interviews and ranking of proposals, the Town of Epsom will negotiate with the top-ranked consultant for contract scope and price. The negotiated contract will be based on fair and reasonable compensation for the services required.

VI. DISCLAIMER

This RFP/RFQ does not commit the Town of Epsom to award a contract or pay any costs incurred during the preparation of the proposal. The Town of Epsom reserves the right to reject any or all of the proposals for completing this work. The Town of Epsom also reserves the right to eliminate the need for the selected consultant to complete one or more tasks, pending the outcome of preceding related tasks or issues.

ATTACHMENT I - SCOPE OF WORK GUIDANCE

Request for Proposals & Qualifications Geomorphology-based Restoration Design and Permitting for the Suncook River in Epsom, NH

INTRODUCTION

The selected consultant will develop the restoration designs and required permits for the Suncook River, Leighton Brook, and Little Suncook River, in Epsom, NH. The final restoration plans will be presented to the Town of Epsom and other project stakeholders to facilitate federal and state grant application processes with the object of securing sufficient funding to complete construction on the river restoration techniques specified in the design and permit package completed by the consultant.

BACKGROUND

An extreme rain event occurred on May 15th and 16th 2006 in New Hampshire which resulted in a state-wide flood. The Suncook River, which flows southwest towards the Merrimack River from its headwaters at Crystal Lake in Gilmanton, experienced a 100-year flood event. The high flood waters caused the Suncook River to change course (an event known as an “avulsion”) in the Town of Epsom near the Huckins Mill Dams, upstream of Bear Island. Prior to the river changing course, just west of the avulsion site, the Suncook river formerly split into two channels at the Huckins Mills site: a primary (west) channel and a smaller, secondary (east) channel. As a result of the 2006 avulsion, the Suncook River now flows through a gravel pit to the northeast of Bear Island (known as “Cutter’s Pit”) before rejoining a portion of a pre-existing secondary channel that formed the eastern margin of Bear Island. Nearly two miles of former channel now lays abandoned, including 1.5 miles of the primary channel that formed the western margin of Bear Island. Aside from small pools and seeps, and contribution from a small tributary, the now-abandoned portions of the Suncook River are not expected to maintain significant year-round flow. The channel is approximately 1.0 mile long, of which about 0.50 mile is newly eroded valley.

In response to the 2006 avulsion, the advancing head-cuts on the main channel of the Suncook River, Little Suncook River, and Leighton Brook, the massive sediment transport downstream, and the increased frequency of severity of flooding along the Suncook River downstream of the avulsion site, the Town of Epsom sought to generate a geomorphology-based restoration alternatives study for the Suncook River. In 2007, a team of engineers and scientists (from the consulting firms VHB/Vanesse Hangen Brustlin, Inc., Parish Geomorphic, and Kleinschmidt Associates), was hired by the Town of Epsom with partial funding provided by the NH Department of Environmental Services to complete an assessment of the project area upstream and downstream of the avulsion. The resulting study completed by the VHB team provided a detailed, geomorphology-based restoration alternatives analysis that allowed the Town of Epsom and their project partners to make an informed decision on how to move forward with restoration of the Suncook River. The VHB study results were based upon extensive field survey, as well as analysis of archival data, and study results from concurrent efforts being carried out by various research institutions, state, and federal agencies. The final technical report published by VHB, titled “*Geomorphology-based Restoration Alternatives – Suncook River, Epsom, New Hampshire, May 28, 2008*” provided detailed analysis for the following restoration alternatives:

- Alternative 1 – No Action
- Alternative 2 – Strategic Treatments (river remains in current location)
- Alternative 3 – Implementation of Alternative 2 and restore the remainder of new channel to its equilibrium endpoint through the application of Natural Channel Design principles
- Alternative 4 – Restore the Suncook River to pre-May 2006 avulsion position (diversion dam)

Shortly after the VHB study was published, the Town of Epsom convened a group of resource professionals, agency representatives, officials from the Towns of Pembroke and Allenstown, district representatives, and the Governor's Office to serve as a Suncook River Restoration Task Force (Task Force). The Task Force evaluated the findings and recommendations from the VHB report, and concluded that Alternative 3 was the logical course of action for generating a river restoration project that would have the highest degree of funding, permitting, and restoration success.

The primary purpose of this project is to generate final engineering designs and permitting for grade controls on the main stem of the Suncook River above and in the vicinity of the avulsion area, grade controls and stream crossings on the Little Suncook River and Leighton Brook, and for floodplain culverts (if deemed feasible) under the railroad bed upstream of the avulsion site. Completion of these tasks will be the catalyst for applying for grant funds to move forward to the implementation stage.

The project area is located along the Suncook River in Epsom, NH, which is part of the Merrimack River Basin. The project is within a reach of the Suncook River located immediately downstream from the Route 4 Bridge and in the river valley between Route 28 to the west and Black Hall Road to the East. The project area also includes the Little Suncook River (0.23 miles downstream of the Route 4 Bridge), and Leighton Brook (0.66 miles downstream of the Route 4 Bridge). The continued headcuts on the Suncook River, Little Suncook River, and Leighton Brook threaten the structural integrity of the Route 4 Bridge, and Black Hall Road respectively. The headcuts also continue to destroy agricultural fields, river bank integrity, and upstream riparian lands.

There are eight (8) river restoration components that require final design, engineering, and permitting associated with this project:

1. **Cross-vanes and/or other appropriate grade control**
 - a. Suncook River above avulsion, and within the new primary channel as determined by consultant downstream to confluence with old primary channel
 - b. Little Suncook River from confluence with Suncook River upstream to Black Hall Road
 - c. Leighton Brook from confluence with Suncook River upstream to Black Hall Road
2. **New channel shaping on Suncook River primary channel**
 - a. Reshape low flow channel on Suncook River.
 - b. Rough grading of floodplain
 - c. Fine grade channel and floodplain
3. **New channel shaping on Little Suncook River and Leighton Brook (as necessary)**
 - a. Reshape low flow channel on Suncook River.
 - b. Rough grading of floodplain
 - c. Fine grade channel and floodplain
4. **Install box culverts on Suncook River floodplain at railroad grade**
 - a. Perform necessary hydraulic and hydrologic modeling to determine feasibility of installing box culverts in floodplain at railroad grade upstream of avulsion site
5. **Install stream crossing on Little Suncook River at railroad grade**
6. **Install stream crossing on Leighton Brook at railroad grade**
7. **Plantings and restoration**
 - a. Riverbank riparian zone
 - b. Scrub/Shrub riparian zone A: Outer Scrub/Shrub zone
 - c. Scrub/Shrub riparian zone B: Inner Scrub/Shrub zone
 - d. Wetland zone
 - e. Forested floodplain zone
8. **Construction Access and Erosion & Sediment Control**
 - a. Sediment control
 - b. Water control structures

c. Construction site access and staging/storage areas

In addition to the restoration objectives outlined above, the consultant will be required to develop a construction estimate for the restoration tasks and a proposed timeline for completion.

The final design and cost estimates for implementation will be presented to the public. The Town of Epsom will be responsible for the preparation and hosting of the public informational session. The Consultant will be responsible for facilitating discussions and presenting the study methods, data, and recommendations at the informational sessions.

All deliverables for review will be submitted to the Town of Epsom as an Adobe .pdf file. The final document and design will be submitted to the Town of Epsom on CD as an Adobe .pdf file, with CAD files and other relevant calculations (i.e. HEC-RAS) included. ArcView GIS Projects produced as part of this contract will be submitted to the Town of Epsom on CD in ArcView 3.x or 9.x format.

Consultants will be ranked based on qualifications, experience, proposals, and interviews as described earlier. The highest ranked consultant will then negotiate price and detailed services with the Town of Epsom. Cost will not be a factor in consultant selection. The Town of Epsom expects to negotiate the contract with the successful candidate who will complete the work in the task descriptions outlined below within the available budget.

OVERALL PROJECT DESCRIPTION

The project consists of final drawings, engineering, and permitting necessary to follow through with implementation of restoration Alternative 3 (excluding dredging) as described in the 2008 VHB report.

I. Develop final design and engineering for the project

The consultant will develop the final design and engineering necessary to implement restoration Alternative 3 (excluding dredging) of the project as described in the 2008 VHB report. The consultant will also develop cost estimates for each component of the proposed restoration on the Suncook River, Leighton Brook, and the Little Suncook River. Cost estimates for the final design will include materials, equipment, and constructions supervision costs.

Task 1. Generate final design and engineering for the new primary channel of the Suncook River above and in the vicinity of the avulsion area. The downstream extent of design and engineering required to arrest incision will be determined by the consultant. Design and engineering will cover grade control, channel shaping, and planting within the riparian and floodplain zones.

Task 2. Generate final design and engineering for the Little Suncook River. Engineering will include grade control, stream crossing at the railroad grade, and channel shaping as needed.

Task 3. Generate final design and engineering for Leighton Brook. Engineering will include grade control, stream crossing at the railroad grade, and channel shaping as needed.

Task 4. Conduct the necessary modeling required to determine the feasibility for the installation of floodplain culverts upstream of the avulsion site. If deemed feasible, generate final design and engineering for the installation of floodplain culverts at the railroad grade on the Suncook River floodplain east of the main channel, upstream of the avulsion site.

Task 5. Generate final design and engineering for plantings within riverbank riparian zones along Suncook River, Little Suncook River, and Leighton Brook. Final design and permitting package for plantings will also include scrub/shrub zones A and B, wetland zones, and forested floodplain zones.

Task 6. Generate final design and engineering for construction access and erosion and sediment control within the proposed project area.

Task 7. Perform field data collection within project area and reference reaches of the Suncook River, Little Suncook River, and Leighton Brook to update existing data sets.

Task 8. Acquire existing data (sediment transport analyses, aerial mapping, geomorphological survey data, etc.) on project area from resource agencies, universities, and other sources that have conducted studies on the Suncook River avulsion site and supplement and utilize as required.

II. Obtain permits necessary to complete the project

The consultant will develop and submit all applications and obtain all permits necessary to construct the final design in Section II. ***This includes responding to all requests for additional information required to satisfy permit review requirements.***

Task 9. Prepare and submit DES Wetlands Permit application.

Task 10. Prepare and submit DES Site Specific Permit application.

Task 11. Prepare and submit DES Water Quality Certificate application.

Task 12. Prepare and submit Army Corps of Engineers Individual Permit application.

Task 13. Prepare and submit EPA Construction General Permit application.

Task 14. Prepare and submit Conditional Letter of Map Revisions

III. Develop Final Report

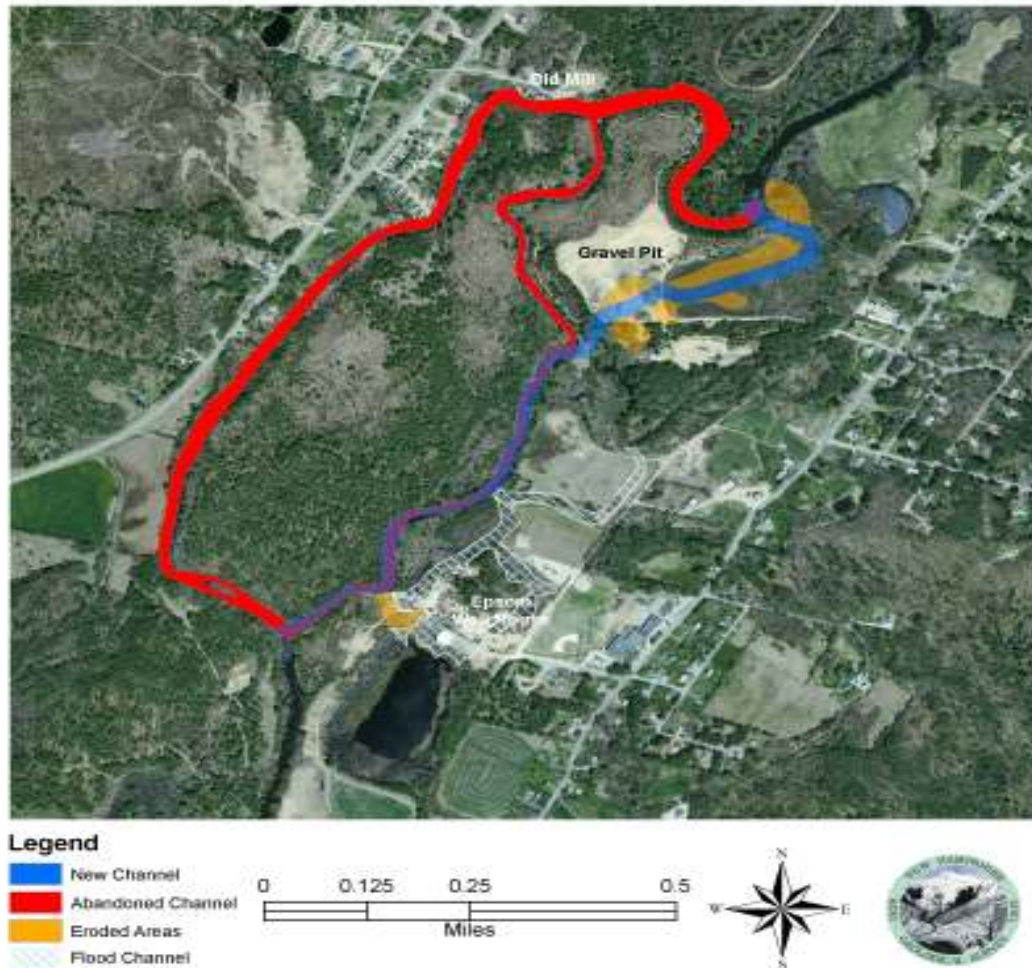
The consultant will develop and submit a comprehensive final report in both electronic and hard copy format to the Town of Epsom on or before the project completion date. The final report shall include a description of all tasks completed, and include the designs and permits required by the signed contract between the Town of Epsom and the consultant.

Task 15: Submit a comprehensive final report in both electronic and hard-copy to the Town of Epsom on or before the project completion date.

IV. Approximate Major Milestones and Estimated Proportion of Contract Effort

Task	Estimated	
	Effort %	Cumulative %
I. Existing data collection/review and field survey	20	20
II. Develop final design and engineering for the project	45	65
III. Obtain permits necessary to complete the project	30	95
IV. Develop Final Report	5	100

GEOGRAPHIC SCOPE



The project area is located to the southeast of the Epsom traffic circle and immediately to the east of Bear Island in Epsom, NH. Both the Little Suncook River and Leighton Brook are included in the project area as well as all of the new channel in the vicinity of the avulsion area adjacent to the gravel pit. Installation of floodplain culverts will occur upstream of the avulsion area on the main channel of the Suncook River along the rail corridor to the east of the river.

RESOURCES

Consultants are strongly encouraged to draw upon the findings in the *FINAL TECHNICAL REPORT: Geomorphology-based Restoration Alternatives – Suncook River, Epsom, New Hampshire* – May 28, 2008 prepared for The Town of Epsom, New Hampshire & The New Hampshire Department of Environmental Services and prepared by: Vanasse Hangen Brustlin, Inc. In addition, the following resources are being made available on the NHDES ftp site for review by consultants:

1. *FINAL TECHNICAL REPORT: Geomorphology-based Restoration Alternatives – Suncook River, Epsom, New Hampshire* – May 28, 2008 prepared for The Town of Epsom, New Hampshire & The New Hampshire Department of Environmental Services. Prepared by: Vanasse Hangen Brustlin, Inc. Report posted at: <http://vhb.com/suncook/>.
2. Public Information Meeting Documents:
 - a. USGS presentation
 - b. FEMA presentation
 - c. VHB Presentation
3. Whitkopp Documents (see Appendix D of the VHB report and the 2006 memo)
4. USGS files (floodplain mapping, sediment transport, some additional geotechnical work in avulsion area)
5. NH Geological Survey files
6. *Geology of the May 2006 Suncook River Avulsion*, Wittkop, Bennett, Chormann and Wunsch, NHGS 2006.
7. Perignon-Thesis
8. *Generic QAPP for Stream Morphology Data Collection*, Provan & Lorber, June 2003
9. *Site Specific Project Plan (SSPP) Template* for operation under the *Generic QAPP for Stream Morphology Data Collection*.
10. NHDES Photo Documentation SOP
11. NHDES QAPP/SSPP guidance documents and templates

I. FTP Directions

- 1) Go to this address using a web browser: <ftp://199.192.6.23/DES/wmb/> . Please note that some may have to copy and paste this address into a browser for the link to work.
- 2) At the login window, click on the box in the lower left hand corner labeled “Login Anonymously”.
- 3) The User name will then be automatically filled in with the word “Anonymous”.
- 4) Type in your email address in the Email Address block.
- 5) Then click on the Log On button.
- 6) The Watershed Management Bureau directories should appear.
- 7) Select the Watershed Assistance folder and then the Suncook River folder

Note: If the site cannot be accessed, it could be due to security settings on your PC. Please check with your computer personnel to correct this issue.